REMARKS

The Applicant thanks the Examiner for indicating that claims 25-27 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. In accordance with this indication, the subject matter of claim 25 is incorporated into independent claim 24 and this amended independent claim is now believed to be allowable. As claims 26-33 depend, either directly or indirectly, from this amended independent claim, those dependent claims are also believed to be allowable.

Claims 29, 30 and 32 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the reasons noted in the official action. The rejected claims 29, 30 and 32 are accordingly amended, by the above claim amendments, and the presently pending claims are now believed to particularly point out and distinctly claim the subject matter regarded as the invention, thereby overcoming all of the raised § 112, second paragraph, rejections. Additionally, it is noted the amendments to claim 32 now represent paragraph [035] of the specifications and curve F''' in FIG. 4. The entered claim amendments are directed solely at overcoming the raised indefiniteness rejection(s) and are not directed at distinguishing the present invention from the art of record in this case.

Claims 14, 21, 22, 24, and 28-34 are rejected, under 35 U.S.C. § 102(b), as being anticipated in view of Popp et al. '597 (U.S. Patent No. 6,375,597). The Applicant acknowledges and respectfully traverses the raised anticipatory rejection in view of the following remarks.

Before discussed the applied art, the Applicant notes that the presently claimed invention relates to a method of increasing the readiness of a crossover gear shift in an automatic transmission. The method comprises the steps of: attaining at least one of a snatch operation of the disengaging switching element and an increase of the transmission rotational speed gradient by: issuing a crossover gear shift switching command to the transmission; transmitting a set transmission rotational speed and a set motor torque from a transmission controller to a motor controller; actuating motor fueling to increase the fuel supplied to the engine and to increase the motor output torque to the transmission immediately after issuing

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the crossover gear shift switching command depending upon one of the set transmission rotational speed and the set motor torque; and adjusting the engagement and disengagement of the transmission clutches depending on the increase of fuel supplied to the engine or a resultant increase in the motor output torque to the transmission during the gear shift.

Turning now to the applied art, Popp et al. '597 describes a method for controlling the shifting time of a transmission from input variables of the vehicle and the driver (col. 1, 35-38). These input variables include variables that are indicative of the driver's desired performance such as accelerator pedal position, manual gear shift requirements, torque generated by the internal combustion engine, etc. Other input variables include data specific to the internal combustion engine such as the rotational speed of turbine shaft and the transmission output shaft (col. 3, lns. 20-32). From these variables a driving activity is determined by a shift program (col. 3, lns. 41-42). Initially it is determined from the above variables whether or not a gear shift is needed. If a gear shift is needed, then the mode of operation is established. It is determined which mode of operation, first or second, is active (col. 3, lns. 45-49).

In the first mode of operation, the transmission control unit determines shift points to be used in the gear shift. Next, a gradient set value of the transmission input rotational speed is adjusted depending on the driving activity (col. 3, lns. 56-59).

In the second mode of operation, it is determined which special program is active, these programs include winter driving W, sport driving S or economic driving E. Depending on the special program that is active, the gradient set value of the transmission input rotational speed is defined and adjusted accordingly (col. 4, lns. 5-25).

In either the first or the second mode of operation, it is determined first whether the gear shift is a traction or a pull shift and then to accomplish the gear shift, the transmission clutches are controlled/adjusted in the manner of adjusting the gradient set value, such that one clutch is disengaged K1 and one clutch is engaged K2 (col. 4, lns. 26-34).

In each case, the gears are shifted in the transmission by adjusting the pressures of the clutches K1, K2. As further discussed below, by adjusting the **pressures** of these clutches K1, K2, the transmission input rotational speed can either be lowered or increased so as to reach a synchronous speed and complete the gearshift either faster or slower.

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In rejecting claim 14 the Examiner indicates that Popp et al. '597 discloses a method of increasing the readiness of a crossover gear in an automatic transmission and identifies the method steps of attaining a snatch operation and an increase of the transmision rotational speed gradient by providing a gear shift switching command to the transmission then "transmitting a set of transmission rotational speed and set motor torque from the transmission controller to a motor controller (POP, col. 3, lines 28-30) actuating a motor fueling (starts at time t3, see Fig. 5B) immediately after the crossover gear shift switching command (at time t1) . . . wherein engagement and disengagement of transmission clutches (lines in Fig. 5C and 5D) are effected by an increase in fuel supplied to the engine (Fig. 5B shows three possibilities for the motor fueling) or a resultant increase in the motor output torque". In short the Examiner suggests that Popp et al. '597 teaches the steps of: first, issuing a shift command; second, transmitting variables to a motor controller; and third, depending on those variables, actuating the motor fueling to increase motor output torque and control engagement/disengagement of the clutches.

The Applicant adamantly asserts that Popp et al. '597 does not in fact teach controlling clutch engagement/disengagement by adjusting motor fueling or motor output torque. As seen in Figs. 5, 6 described in Popp et al. '597, the method of the reference for controlling the transmission rotational input speed is thus. Initially at time point t1, a shift command is issued. Also at time point t1, the Figs. 5C, 5D teach that the pressures in the clutches K1, K2 respectively rapidly decrease (to disengage K1) and rapidly increase (to engage K2), after which at time point t3 "as a result of the reduced **pressure level** of the first clutch K1, the transmission input rotational speed nT begins to increase" (col. 5, lines 4-15). Further, "[t]he **pressure level** at point H of the first clutch K1 is lower than that at point F. As a consequence of this [reduced pressure], the transmission input rotational speed nT begins at time t3 to rise more quickly" (col. 5, lines 31-34). In addition, "[t]he **pressure level** K is higher than that of point F. Consequently, the transmission input rotational speed nT begins to rise more slowly" (col. 5, lines 47-50). Looking at Fig. 5B, with regard to the transmission input rotational speeds of each of the curve paths C, B, D, "[u]p to time t3, the curve[s] are identical" (col. 5, lns. 29-30 and 46). At time t3 the curves begin to diverge, due to the pressure level of the first clutch K1,

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the amount of time it takes for the transmission input rotational speed to reach a certain value n2 is different for each curve (times t4, t5, t6). So, "[b]etween the two curve paths (hatched line/sport gear shift and dot-dash line/comfortable gear shift), depending on the driving activity FA, the gradient set value nT(GRAD-SOLL) of the transmission input rotational speed nT can be arbitrarily changed" (col. 5, lns. 64-67).

In sum, Popp et al. '597 teaches that by changing the **pressure** in the disengaging clutch K1, one can adjust the transmission input rotational speed gradient. This is in opposition to the assertions made by the Examiner that "engagement and disengagement of transmission clutches. . . are effected by an increase in fuel supplied to the engine or a resultant increase in the motor output torque". In view of the above, it is respectfully submitted that Popp et al. '597 only pertains to *adjusting the pressure of the clutches* in improving a gearshift within an automatic transmission, but does not pertain to the use of additional motor fueling.

Additionally, amended claim 34 recites similar limitations as amended claim 14 and is believed to be allowable for at least the above noted reasons. Such features are believed to clearly and patentably distinguish the presently claimed invention from all of the art of record, including the applied art and the raised rejection should be withdrawn at this time.

In order to emphasize the above noted distinctions between the presently claimed invention and the applied art, independent claim 14 of this application now recites the features of "actuating a motor fueling to increase fuel supplied to the engine and to increase motor output torque to the transmission immediately after the crossover gear shift switching command depending upon one of the set transmission rotational speed and the set motor torque; and adjusting engagement and disengagement of transmission clutches depending on the increase in fuel supplied to the engine or a resultant increase in the motor output torque to the transmission during the gear shift". Such features are believed to clearly and patentably distinguish the presently claimed invention from all of the art of record, including the applied art.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

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In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejections should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejections or applicability of the Popp et al. '597 reference, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,

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